DETAILED REMARKS.

Applicant amended the BRIEF DESCRIPTION OF THE DRAWINGS section in the specification, which was objected by the examiner. Description for individual Figs. 1A, 1B, 1C, 5A, 5B, 6A, and 6B has been supplied. All other amendments to the specification merely correct typing, and grammatical miscues. No new material has been added.

The Office Action (OA) states "Claim 1-2, 4-8, 9, 15-17, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich et al , Pat. No. 6351419 in view of Chen et al, Pat. No. 6108258." Applicant respectfully submits that rejection of claim 1 under 35 U.S.C. 103(a) as obvious over Dietrich in view of Chen is not warranted. But, to further distinguish the present invention, applicant amended claim 1 by adding the element that the primary sense amplifier (PSA) has single ended sensing. Support for single ended sensing is given in figures 1 to 3, and throughout the specification text, for instance page 3, line 16; page 12, line 1. Accordingly, in amended claim 1 the PSA of the present invention has single ended sensing, has storage capability, has write-back capability, and has at least two amplification stages.

Applicant suggests that the PSA-s in Dietrich are not material because they are standard, prior art DRAM differential sense amplifiers. They are noted as "SA" (not SSA) in the figures of Dietrich. They take two inputs, for instance $\overline{BL1}$ and BL1, etc. Dietrich is concerned with writing whole blocks of data at once from color registers, and says nothing of PSA-s, obviously regarding them as standard. The OA states: " ... Dietrich discloses a DRAM (col. 1, line 14) (also with regard to claim 8 and 20), comprising: at least one primary sense amplifier (fig. 2, SSA1, SSA2), wherein the at least one primary sense amplifier has data storage and data write-back capability (col. 3, line 32-46) (col. 4, line 27-34) (also with regard to claim 5-7), ... " Applicant respectfully points out that SSA1, SSA2, and in general SSAi in Dietrich, are global sense amplifiers, as explicitly stated throughout Dietrich, for instance on line 28 column 3, where the SSA-s are first presented. Also, the storage capability in Dietrich is in: "color register or memory unit 11", see figures 1 and 2, and line 33 column 1, and it is not part of the SSA global amplifier, and especially it is not part of the local, "SA" indicated, primary sense amplifier. Accordingly, applicant respectfully avers that the PSA-s in Dietrich, noted as "SA", have none of the attributes claimed for primary sense amplifiers in claim 1 of the present invention.

Chen (6108258) does teach a two amplification stage PSA, but this element is the only commonality with the PSA of claim 1 of the present invention. The amplifier in Chen is specifically designed for differential sensing (see for instance line 39 column 2). It has no single ended sensing with storage and with write-back features. It is not intended for such applications.

Applicant respectfully contends that, as pointed out in the preceding paragraphs, Dietrich and Chen in their combination do not have the elements of the PSA in the present invention; neither do they suggest such elements. In fact, having no use for such elements in their applications they teach away from the PSA of claim 1.

Regarding independent claim 9, the OA also rejects it based on Dietrich et al , Pat. No. 6351419 in view of Chen et al, Pat. No. 6108258, however, dependent claim 10 would be allowed. Accordingly, applicant added the limitation of claim 10 to claim 9, rewriting the part of claim 9 dealing with full-wordline I/O structure. Also, the element of the primary sense amplifier was removed from claim 9, as being already dealt with in claim 1. Claim 10 has been cancelled, and so has claim 19, as dealing with PSA-s. Claim 21 has been amended in accordance with claim 9, and claim 22 cancelled.

All further amendments to the claims are related to the objections in the OA regarding antecedent basis. On 06/24/05 applicant had a telephone interview with examiner regarding antecedent basis for claim 4. Applicant is cautiously confident that examiner will find the presently amended claims all properly constructed, and remove the rejections based on 35 U.S.C 112. Claim 13, rejected based on 35 U.S.C. 112, has been cancelled.

Applicant respectfully submits that if the amended independent claims 1, 9, and 21 are patentable, then all claims depending on these, which include further limitations, are a fortiori patentable.

Finally, applicant cancels all of the APPENDIX, pages A1 to A14, which contained detailed circuits, simulations, and layouts for the invention, and which APPENDIX was submitted together with the application on 09/05/2003.

CLOSING STATEMENTS

Applicant respectfully submits that as expressed in this amendment the claims now put forward only patentable subject matter.

Applicant submits that this application is now in condition for allowance, which action is respectfully requested.

Respectfully,

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